

PATENT SPECIFICATION

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DRAWINGS ATTACHED.

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COMPLETE SPECIFICATION.

Improvements in or relating to Valves for Spray Nozzles.

We, A. SUTTER LTD., a body corporate organised under the Laws of Switzerland, of Münchwilen, Thurgau, Switzerland, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to a valve for nozzles for spraying liquids used in the household and in trade. The invention is chiefly concerned with liquids used in the care of floors, and in particular with the application of a cleaning agent and a liquid wax. The necessary pressure for spraying is obtained by a gas in the liquid or by a pump.

With valves of the prior art there is invariably dripping from the nozzle orifice after spraying. This dripping is due to the small surface tension of the fluid and is particularly disadvantageous in floor care, because the floor is spotted.

The invention will now be described in detail, with reference to the accompanying drawing, wherein:

Fig. 1 is a side view in cross section of the entire valve;

Fig. 2 is a side view in corresponding to Fig. 1, of the valve closed; and

Fig. 3 is a side view corresponding to Fig. 1 of the valve opening.

A housing 1 has located therein an annular valve seat 2 clamped in place by a nipple 3. The valve proper, which is in the form of a sphere 4, is pressed against the opening 6 of the valve ring 2 by a compression spring 5. A threaded nipple 7, serving to connect the valve with a can containing an emulsion of a cleaning agent and a hard wax, is crewed into the left end of the housing 1.

The right end has screwed thereon a spray nozzle 8 of known design. The right

end of the nozzle has a spray opening through which the spray is ejected.

The seat 2 is made of an elastic synthetic plastic, whereby the spring-loaded ball 4 is forced leftwards closing the valve, Fig. 2. The spring acts in the direction of the arrow 10.

If the can is put under pressure by a pump, the pressure, acting in the direction of the arrow 11, bends the seat 2 rightwards, Fig. 3. The seat 2 bends to its maximum limit, whereupon the pressure forces the sphere 4 further rightwards, permitting the can's contents to be driven through the valve and the nozzle 8.

As soon as the pressure falls, the sphere 4 returns to its valve-closing position, Fig. 2, causing, first of all, closure to be effected between the seat 2 and the sphere 4. The former is bent further leftwards to its maximum extend by the force of spring 5, resulting in an expansion of the volume of the pressure equalization chamber 12 located between the valve and the nozzle. The chamber, consequently, is at subatmospheric pressure. Any drops remaining on the nozzle orifice 9 after spraying are sucked into the chamber 12, thus preventing any spray from dripping from the nozzle.

WHAT WE CLAIM IS:—

1. In or for a spray nozzle a valve, situated or adapted to be situated so as to define between itself and a nozzle exit a substantially enclosed space, and including a valve member resiliently biased in one direction, an elastic seat against which said valve member is pressed, said member and seat acting as the valve, and said seat being subject to the pressure of the liquid to be sprayed acting counter to said one direction, the arrangement being such that when the pressure of the liquid to be sprayed is reduced the seat is deflected by

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- the valve member so as to increase the volume of the substantially enclosed space.
2. The valve as defined in Claim 1, wherein said seat is made of a synthetic plastics material.
3. The valve as defined in Claim 1 or 2, wherein said valve member is spherical.
4. The valve as defined in Claim 1, 2, or 3, including a housing in which said seat is located, and means for clamping the seat in the housing.
5. The valve as defined in any Claim 1, 2, or 4, wherein said seat is annular and said valve member is spherical, and the opening of which seat is smaller than the diameter of said valve member.
6. The valve as defined in any Claim 1 to 4 wherein said seat is of annular form having a central opening, and is clamped around its outer periphery, the inner portions of the seat being capable of bending elastically about said outer periphery uniformly out of the general plane defined by the seat.
7. The valve as defined in any preceding Claim, wherein said seat bends elastically in the direction of the line defined by the longitudinal axis of the valve.
8. The valve according to Claim 1 and substantially as herein described, with reference to and as illustrated by the figures of the accompanying drawing.

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